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Fusion-2009

Thirteen-in-one Integrated Processor

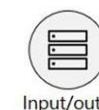Intelligent controller · video switching matrix · Digital audio processing · Audio digital power amplifier · POE Switch · video Conference · Recording · Input/output interface · IPC input

PRODUCT OVERVIEW

The **Fusion-2009** is a state-of-the-art 13-in-1 integrated processor engineered for high-performance multimedia applications. Building on advanced design principles, the Fusion-2009 merges thirteen core functionalities into a single, compact unit — simplifying system integration, reducing installation time, and improving overall efficiency.

With its powerful and flexible feature set, the Fusion-2009 is the perfect fit for modern smart classrooms, multimedia conference rooms, training centers, lecture halls, and multi-functional venues. From on-site presentations and remote conferencing to live streaming and interactive learning, the Fusion-2009 delivers seamless performance and reliability across a wide range of professional environments.

KEY FEATURES

- **Smart Centralized Control:** Integrated control of multimedia equipment via a conference tablet, enabling unified management of audio/video, conferencing, recording, broadcasting, and third-party peripherals.
- **Standard Control Interfaces**: Supports RS232/485, IR, IO, and RELAY connections for common AV and automation devices.
- **Zigbee IoT Protocol**: Enables wireless control of smart devices through Zigbee integration.
- **Bi-directional Serial Communication**: Supports two-way control over a single serial link for seamless device interaction.
- **Hybrid Control Design:** Combines wired and wireless IoT control, preventing interference and disconnection even in shielded environments.
- **4K Video Matrix Switching**:4-in 2-out seamless 4K@60Hz video switching for fast and clear AV transitions.
- **Digital Audio Interface**: Features 8-in/4-out configuration with network and HDMI audio routing.
- **Built-in Amplifier**: Delivers 2×100W output power for direct speaker drive.
- **Multi-Stream Local Recording**: Records 4–6 video streams simultaneously for meetings, training, or lectures.
- **IPC Camera Integration:** Supports up to 12 IPC video inputs for live output, display, or recording.

APPLICATIONS

- Meeting Room
- Courtrooms
- Hotels
- Conference Center
- Classrooms
- Lecture Halls

- House of Worship
- Training Rooms
- All Hand Space

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TECHNICAL SPECIFICATIONS

System Specifications

System Architecture	Industrial-grade embedded system, virus-resistant
Operating System	Embedded system (OS not specified)
Built-in PC	OPS computer with 16GB RAM, 512GB SSD
Display Control	Supports central control panel (various 10.1"/4" Android PoE or non-PoE options)
Central Control Functions	One-touch control for system power, signal switching, volume control, recording, broadcasting, remote call, environment control
Maintenance Interface	Web interface for configuration, upgrades, logs, remote O&M, Telnet debugging, USB restore
Energy Saving	Network sleep/wake, one-touch system shutdown

Technical Specifications

Audio Input	8× Phoenix MIC/Line (48V Phantom), 8× HDMI embedded, 16× RTSP, 2× DSP, 1× OPS, 1× wireless screen projection, 1× wireless speech, DIGIT MIC network port (2 mic links)
Audio Output	4× Line out, 4× 200W@8Ω digital amp, 8× HDMI embedded, 10× DSP, 1× OPS
Video Input	8× 4K HDMI, 16× IP network camera, 1× OPS, 1× wireless screen projection
Video Output	8× 4K HDMI, 8× RTMP, 1× OPS
Data Interface	2× USB Type-A, 1× USB Type-B
Network Ports	2 WAN, 6 LAN (configurable), 4× PoE supported
Communication Protocols	SIP, BFCP, H.323, H.239, RTSP, RTMP, TCP/IP, HTTP, FTP, UDP, RTP, RTCP, TLS, Telnet, NAT, E.164, H.245, H.225, Q.931, NTP
Video Codec	H.264 (HP/MP/BP), H.265 MP
Audio Codec	G.711, G.722, G.722.1, G.722.1C, AAC
Video Processing	Resolution adaptation, switching, overlay, split-screen, image adjustments
Audio Processing	AEC, AGC, ANC/ANS, AFC, PLC, AM (mixer matrix)
Video Encoding	4× 1080P60 or 8× 1080P30
Video Decoding	4× 1080P60 or 8× 1080P30
Max Codec Channels	16 channels 1080P; 512 Kbps – 16 Mbps per channel
Screen Splits	Single to 16-screen splits (e.g., 2/4/9/13/16)
Max Output Display	4K/2K resolution, 4 independent display groups
Recording	Up to 6-channel simultaneous recording, supports MP4, USB backup, content management, supports 4K multi-screen synthesis (virtual)
Streaming	Supports RTMP and multicast; up to 10 channels
Broadcasting	Acts as client & distribution terminal
Wireless Screen Projection	PC/mobile/PAD supported, 1-click projection, external antenna support
Wireless Speaking Module	Dual mic support, handheld/lapel/headset, antenna supported

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Mechanical Specifications

Installation	3U rackmount (telecom standard)
Dimensions	437 mm (W) × 410 mm (D) × 132.5 mm (H)
Power Input	AC 100-240V, 50/60Hz
Power Consumption	Typical: 50W, Full Load: 750W
Operating Conditions	Temperature: 0-45°C Humidity: 10%-90% Altitude: ≤ 5000 meters

Optional Cards(Host chassis)

Host chassis	Standard built-in main control card (MAIN card) and audio card (AUDIO card)
Main control board (MAIN card)	Includes 8 Gigabit Ethernet ports (including 4 POE), 3 RS-232/485 ports, 1*RS232/RS485 DEBUG , 2 RELAY ports, 2 I/O ports, 2 infrared IR ports, 2 USB Type-A ports, 1 USB Type-B port
Audio board (AUDIO card)	Hand-in-Hand digital audio speaking system, supports 2 Hand-in-Hand digital microphone link access (DIGIT MIC network port), 8-way Phoenix terminal MIC/LINE input (supports 48V phantom power MIC input or line in linear input), 4-way Phoenix terminal line audio LINE OUT output, 4-way digital power amplifier output (4x200W@8Ω)

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Four-channel HDMI input card

Board Type	One card four-channel HDMI input card, installed in the host for delivery
Host Adaptation	A single host supports up to 2 HDMI input cards
Input signal	4-channel HDMI signal, support embedded audio signal input
Input Connectors	Type A 19-pin female connector
Signal Type	HDMI, DVI-D, automatic identification of input signals
Resolution	Maximum input resolution 4K30
Audio Format	Support PCM format
standard	Supports HDMI 2.0
EDID Management	Support EDID import
Other features	Support character overlay function

Four-way HDMI output card

Board Type	One card four-channel HDMI output card, installed in the host for delivery
Host Adaptation	A single host supports up to 2 HDMI output cards
Output signal	4-channel HDMI signal, support embedded audio signal output
Input Connectors	Type A 19-pin female connector
Signal Type	HDMI, DVI-D
Resolution	Maximum output resolution 4K30
standard	Supports HDMI 2.0
Other Features	Support configurable output format

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Optional Cards(OPS Board CR-OPS-WIN)

Board Type	OPS board, loaded into the host for delivery, standard configuration integrated OPS 11th generation computer OPS-I5A11-16-512 (16G+512G), pre-installed Windows 11 Professional operating system; (specific configuration is subject to delivery)
Host Adaptation	A single host supports up to 1 OPS card
OPS Performance (Specific configuration is subject to delivery)	1. Six cores and twelve threads; 2. Main frequency 2.7GHz-4.6GHz; 3. Cache level 3 12MB; 4. Motherboard configuration: I5 11500; 5. Graphics card: Intel HD Graphics 750; 6. Resolution 5K60HZ; 7. Basic frequency: 350MHz; 8. Dynamic frequency: 1.3GHz; 9. CPU power consumption: 65W; 10. Normal working power consumption: 85W; 11. Maximum power consumption: 120W;

Wireless screen projection card

Board Type	The wireless screen projection receiving module card is installed in the host for delivery; the wireless screen projection receiving module card comes standard with a WIFI one-key screen transmitter pigtail VIA-T8; it comes standard with 2 short rod antennas, 2 antenna extension cables, and 2 suction cups to prevent the cabinet from shielding the wireless screen projection signal;
Host Adaptation	A single host supports up to 1 wireless screen projection receiving module card
Wireless projection performance	1. Wi-Fi module: 5GHz/2.4GHz 2. Wi-Fi bandwidth: 867MHz 3. Start-up time: <15s 4. Screen projection response time: ≤3s 5. Preemption response time: ≤2s 6. Support system: Windows / Mac OS / IOS / Android 7. Operation mode: plug and play, one-click screen projection 8. Pairing method: Insert the USB port of the receiver to automatically pair 9. Transmission resolution: 1920 x 1080 10. Frame rate: 30fps and below 11. Power supply interface: USB2.0, USB3.0 12. Video transmission interface: USB2.0, USB3.0 13. Touch feedback: 10 points @Windows/Mac OS

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TECHNICAL SPECIFICATIONS

Wireless Microphone Card

Board Type	UHF wireless speech receiving module board, installed in the host for delivery; UHF wireless speech receiving module board comes with 2 wireless handheld microphones MD-13; comes with 2 short rod antennas, 2 antenna extension cables, and 2 suction cups to prevent the cabinet from shielding the wireless projection signal;
Host Adaptation	A single host supports up to 1 UHF wireless speech receiving module board
UHF wireless speaking board performance	Wireless microphone receiving card parameters: 1. Visible band range: 470-960MHz (depending on the region); 2. Audio response: 20 Hz-18 kHz; 3. Total harmonic distortion: <1% (@AF1 KHz, RF46 dBu); 4. Dynamic range: >100 dB; 5. Signal-to-noise ratio: >92 dB; Wireless handheld microphone parameters: 1. Handheld transmitter microphone core: dynamic type; 2. Input gain range: 30 dB; 3. RF output power: 10 mw; 4. Power requirements: 2 AA (LR6) alkaline batteries; 5. Battery life: up to 10 hours; 6. Size: 36 x 245 (mm); 7. Weight: 0.28KG;